



**[4910-13-P]**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2013-0519; Directorate Identifier 2010-SW-068-AD;**

**Amendment 39-17623; AD 2013-20-17]**

**RIN 2120-AA64**

**Airworthiness Directives; Eurocopter Deutschland GmbH (ECD) Helicopters**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for ECD Model BO105C (C-2 and CB-2 Variants) and BO105S (CS-2 and CBS-2 Variants) helicopters with a certain third stage turbine wheel installed. This AD requires installing a placard on the instrument panel and revising the limitations section of the rotorcraft flight manual (RFM). This AD is prompted by several incidents of third stage engine turbine wheel failures, which were caused by excessive vibrations at certain engine speeds during steady-state operations. These actions are intended to alert pilots to avoid certain engine speeds during steady-state operations, prevent failure of the third stage engine turbine, engine power loss, and subsequent loss of control of the helicopter.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain documents listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this AD, contact American Eurocopter Corporation, 2701 N. Forum Drive, Grand Prairie, TX 75052; telephone (972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at <http://www.eurocopter.com/techpub>. You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the foreign authority's AD, any incorporated-by-reference service information, the economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (phone: 800-647-5527) is U.S. Department of Transportation, Docket Operations Office, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Chinh Vuong, Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone (817) 222-5110; email [chinh.vuong@faa.gov](mailto:chinh.vuong@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

On June 20, 2013, at 78 FR 37150, the Federal Register published our notice of proposed rulemaking (NPRM), which proposed to amend 14 CFR part 39 by adding an AD that would apply to ECD Model BO105C (C-2 and CB-2 Variants) and BO105S (CS-2 and CBS-2 Variants) helicopters with a third stage turbine wheel, part number (P/N) 23065833, installed. The NPRM proposed to require installing a placard on the instrument panel next to the triple RPM indicator and revising the Limitations sections of the Model BO 105C/CS and BO105 CB/CBS RFMs to limit steady-state operations between speeds of 86.5% and 95.5%. The proposed requirements were intended to alert pilots to avoid certain engine speeds during steady-state operations, prevent failure of the third stage engine turbine, engine power loss, and subsequent loss of control of the helicopter.

The NPRM was prompted by AD No. 2010-0128, dated June 25, 2010, issued by the European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union. EASA issued AD No. 2010-0128 to correct an unsafe condition for Model BO 105 C, BO 105 D, and BO 105 S helicopters, and certain variants of those models. EASA advises that several failures of third stage turbine wheels used in Rolls Royce Corporation (RRC) 250 series engines have occurred. According to EASA, RRC has determined that detrimental vibrations can occur within a particular range of turbine speeds, and may be a contributing factor to these failures. This condition, if not corrected, could result in loss of engine power, possibly resulting in an emergency landing and injuries to the helicopter occupants. To address this, RRC issued Commercial

Engine Bulletin (CEB) A-1400, now at revision 3, for engines with a third stage turbine wheel, P/N 23065833, installed. CEB A-1400 introduces an operational limitation to avoid engine power turbine (N2) steady-state operation in a speed range between 86.5% and 95.5% for more than 60 seconds in single or cumulative events. In response, ECD has revised the RFM and has provided a placard to inform pilots to avoid steady-state operations between 86.5% and 95.5% turbine speeds.

The EASA AD requires amending the RFMs and installing a placard as described in ECD Alert Service Bulletin No. BO105-60-110, Revision 1, dated March 3, 2010 (ASB BO105).

#### **Comments**

We gave the public the opportunity to participate in developing this AD, but we did not receive any comments on the NPRM (78 FR 37150, June 20, 2013).

#### **FAA's Determination**

These helicopters have been approved by the aviation authority of Germany and are approved for operation in the United States. Pursuant to our bilateral agreement with Germany, EASA, its technical representative, has notified us of the unsafe condition described in the EASA AD. We are issuing this AD because we evaluated all information provided by EASA and determined the unsafe condition exists and is likely to exist or develop on other helicopters of these same type designs and that air safety and the public interest require adopting the AD requirements as proposed.

#### **Related Service Information**

ECD has issued ASB BO105, which contains procedures for installing a placard on the instrument panel stating the prohibited steady-state turbine operating range.

Revision 1 of ASB BO105 removed the temporary RFM pages as these changes were included in the most recent revisions of the BO105C/CS and BO105CB/CBS RFMs.

### **Costs of Compliance**

We estimate that this AD affects 80 helicopters of U.S. Registry.

Based on an average labor rate of \$85 per hour, we estimate that operators will incur the following costs in order to comply with this AD. Amending the RFM will require about 0.5 work-hour, for a cost per helicopter of about \$43 and a cost to U.S. operators of \$3,440. Installing the decal will require about 0.2 work-hour, and required parts will cost about \$5, for a cost per helicopter of \$22 and a cost to U.S. operators of \$1,760. Based on these estimates, the total cost of this AD is \$65 per helicopter and \$5,200 for the U.S. operator fleet.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on helicopters identified in this rulemaking action.

## **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866;
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction; and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

## **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2013-20-17 **EUROCOPTER DEUTSCHLAND GMBH (ECD)**: Amendment 39-17623; Docket No. FAA-2013-0519; Directorate Identifier 2010-SW-068-AD.

**(a) Applicability**

This AD applies to ECD Model BO105C (C-2 and CB-2 Variants) and BO105S (CS-2 and CBS-2 Variants) helicopters with a third stage turbine wheel, part number 23065833, installed, certificated in any category.

**(b) Unsafe Condition**

This AD defines the unsafe condition as a third stage turbine vibration, which could result in turbine failure, engine power loss and subsequent loss of control of the helicopter.

**(c) Effective Date**

This AD becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(d) Compliance**

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

**(e) Required Actions**

Within 30 days:

(1) For BO105C-2 and BO105CS-2 Variant helicopters, revise the Rotorcraft Flight Manual (RFM), Section 2, Limitations Section, by inserting page 2-25 of ECD Flight Manual BO 105 C/CS, revision 5, dated March 12, 2010.

(2) For BO105CB-2 and BO105CBS-2 Variant helicopters, revise the RFM, Section 2, Limitations Section, by inserting pages 2-8 and 2-27 of ECD Flight Manual BO 105 CB/CBS, revision 8, dated March 12, 2010.

(3) Install a placard on the instrument panel next to the triple RPM indicator that states: MIN. CONTINUOUS 98% N<sub>2</sub> – MIN. TRANSIENT 95% N<sub>2</sub>

**(f) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Safety Management Group, FAA, may approve AMOCs for this AD. Send your proposal to: Chinh Vuong, Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone (817) 222-5110; email [chinh.vuong@faa.gov](mailto:chinh.vuong@faa.gov).

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office, before operating any aircraft complying with this AD through an AMOC.

**(g) Additional Information**

(1) ECD Alert Service Bulletin No. BO105-60-110, Revision 1, dated March 3, 2010, which is not incorporated by reference, contains additional information about the subject of this AD. For service information identified in this AD, contact American Eurocopter Corporation, 2701 N. Forum Drive, Grand Prairie, TX 75052; telephone



(972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at <http://www.eurocopter.com/techpub>. You may review a copy of the service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

(2) The subject of this AD is addressed in European Aviation Safety Agency (EASA) AD No. 2010-0128, dated June 25, 2010. You may view the EASA AD on the internet in the AD Docket at <http://www.regulations.gov>.

**(h) Subject**

Joint Aircraft Service Component (JASC) Code: 7250: Turbine Section.

**(i) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Page 2-25 of Section 2, Limitations, of Eurocopter Deutschland GmbH Flight Manual BO 105 C/CS, Revision 5, dated March 12, 2010.

(ii) Pages 2-8 and 2-27 of Section 2, Limitations, of Eurocopter Deutschland GmbH Flight Manual BO 105 CB/CBS, Revision 8, dated March 12, 2010.

(3) For Eurocopter service information identified in this AD, contact American Eurocopter Corporation, 2701 N. Forum Drive, Grand Prairie, TX 75052; telephone (972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at <http://www.eurocopter.com/techpub>.

(4) You may review a copy of this service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

(5) You may also view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to:

<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Fort Worth, Texas, on September 20, 2013.

Scott A. Horn,

Acting Directorate Manager, Rotorcraft Directorate,  
Aircraft Certification Service.

[FR Doc. 2013-26562 Filed 11/07/2013 at 8:45 am; Publication Date:  
11/08/2013]